REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are requested.

The abstract has been objected to as containing the phrase "is disclosed." The specification and abstract have been reviewed and revised to make a number of editorial revisions, including the removal of the phrase "is disclosed." Due to the number of changes involved, a substitute specification and abstract have been prepared and are submitted herewith. No new matter has been added. Enclosed is a marked-up copy of the original specification and abstract indicating the changes incorporated therein. As a result, withdrawal of the objection to the abstract is respectfully requested.

Claims 1-8, 10-12 and 18-20 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the rejection indicates that claims 1, 3, 10 and 18 recite terms which lack proper antecedent basis. Claim 1, 3 and 10 have been amended to overcome this rejection and claim 18 has been canceled without prejudice or disclaimer to the subject matter contained therein. As a result, withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 1 and 5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe (US 6,392,692) in view of Raskin (US 3,668,526). Claims 2-4 and 6 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and further in view of Rostoker (US 5,793,416). Claim 7 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and further in view of Ichino (US 5,440,351). Claim 8 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and Rostoker and further in view of Ichino (US 5,440,351). Claims 9, 10, 13, 16 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and further in view of Strandwitz (US 6,522,352). Claims 11, 12, 17, 19 and 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and Strandwitz and further in view of Ichino. Claims 14 and 15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Monroe in view of Raskin and Strandwitz and further in view of Rostoker.

Claims 1, 9 and 13 have been amended so as to further distinguish the present invention over the references relied upon in the rejections. Claims 5, 6, 16 and 18-20 have been canceled without prejudice or disclaimed to the subject matter contained therein. Claims 21-29 have been added.

In addition, claims 1-4, 7-15 and 17 have been amended to make a number of editorial revisions. These revisions have been made to place the claims in better U.S. form. None of these amendments have been made to narrow the scope of protection of the claims, nor to address issues related to patentability and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

Claim 1 is patentable over the combination of Monroe and Raskin, since claim 1 recites a transmitter for transmitting at least one of a moving image and an audio signal to a communication terminal having, in part, an audio output instructing unit for determining whether to transmit the audio signal by a radio transmitting unit in the transmitter or to output the audio signal by an audio output unit in the transmitter, as a selection, depending on a distance between the transmitter and the communication terminal, wherein the distance is obtained based on a field strength of a radio wave transmitted from the communication terminal. The combination of Monroe and Raskin fails to disclose or suggest an audio output instructing unit as recited in claim 1.

Monroe discloses a network communication system that allows a commercial airplane 10 to wirelessly communicate with a ground control tower 216 or a ground station 18 via a radio 80 or a LAN transceiver 280. The commercial airplane 10 can have a number of different sensors that can transmit images C1-Cn, audio 224, 226, 228, 113 or measurements 62, 230, 115 to the ground control tower 216 via the radio 80 or LAN transceiver 280. All of the information detected by the sensors is transmitted to a multimedia multiplexer 232 where it is multiplexed. The airplane also has a display monitor 54 where the images and measurements can be displayed, a speaker 240 where the audio can be reproduced, a recorder 70 where all of the information can be stored, and a data transceiver 76 that can transmit all of the information to the control tower 216 via the radio 80 or the LAN transceiver 280. (See column 21, line 19 - column 22, line 60 and Figures 12C, 13 and 16).

As indicated in the rejection, Monroe fails to disclose an audio output instructing unit for determining whether to transmit an audio signal by the radio 80 or the LAN transceiver 280 or to output the audio signal by the speaker 80, as a selection, depending on a distance between the

commercial airplane 10 and the ground control tower 216. However, the rejection indicates that, although Monroe fails to disclose this feature, "[i]t is however considered obvious that if the moving image and audio transmitter is close enough to the communication terminal, only the speaker from the moving image and audio transmitter unit is needed for communication between the two, and thus not requiring any radio communication." This indication of obviousness is respectfully traversed for the following reasons.

Based on the above statement, it is the position in the rejection that it would be obvious for the airplane 10 to communicate with the ground control tower 216 via the speaker 240, instead of either the radio 80 or the LAN transceiver 280, if the airplane 10 was close enough to the ground control tower 216. However, since the speaker 240 is to be used by the operator, i.e., pilot, of the commercial airplane 10 to review audio, it is apparent that the speaker 240 is most likely located in the cockpit of the commercial airplane 10. Since the majority of, if not all, commercial airplanes are designed to be pressurized and to reduce that amount of engine noise that enters the passenger cabin and cockpit, it is highly unlikely that the ground control tower 216 would be able to receive the audio via the speaker 240 at any volume. Further, even if the audio could be amplified to such a level to be heard by the ground control tower 216, the volume would most likely have to be so high that the pilot in the cockpit with the speaker 240 would be deafened. As a result, it would not be obvious to modify Monroe as suggested in the rejection.

Further, it is apparent that Monroe fails to disclose an audio output instructing unit for determining whether to transmit the audio signal by a radio transmitting unit in the transmitter or to output the audio signal by an audio output unit in the transmitter, as a selection, depending on a distance between the transmitter and the communication terminal, wherein the distance is obtained based on a field strength of a radio wave transmitted from the communication terminal.

In addition to indicating that it is obvious to use the speaker 240 for communication between the commercial airplane 10 and the ground control tower 216, if commercial airplane 10 is close enough to the ground control tower 216, the rejection also relies on Raskin as disclosing this feature.

Raskin discloses a system in which signals can be sent between an antenna 11 of a police station 10 and an antenna 13 of a police vehicle 12. The police vehicle 12 also has a transceiver 25, an outside speaker 14, a siren 15, revolving top lights 16, spotlights 17 and a second antenna 18. The

second antenna 18 is used for communication with a remote transmitter 21 having an antenna 22 that can be carried by a police officer 20. The remote transmitter 21 includes a microphone 34, a push-to-talk switch 35 and a frequency select switch 36.

The system operates such that when the officer 20 is outside of the vehicle 12 and needs to communicate with the police station 10, the push-to-talk switch 35 on the remote transmitter 21 is depressed. Once the push-to-talk switch is depressed, the remote transmitter 21 sends a signal to the transceiver 25 in the vehicle 12 which relays the signal to the police station 10. The remote transmitter 21 also has another feature in that should the officer 20 face a dangerous situation, the select switch 36 can be switched which sends a distress signal to the transceiver 25 in the vehicle 12 which triggers the siren 15, revolving top lights 16 and spotlights 17 to scare away the person endangering the officer 20. (See column 2, line 30 - column 4, line 71 and Figures 1 and 2).

As discussed above, the system of Raskin discloses the police vehicle 12 that has the outside speaker 14 and the transceiver 25. However, the transceiver 25 appears to be used to communicate between the police station 10 and the remote transmitter 21, while the outside speaker 14 appears to be used by the officer 20 to communicate with other people on the street. As a result, it is apparent that Raskin fails to disclose or suggest the audio output instructing unit for determining whether to transmit the audio signal by a radio transmitting unit in the transmitter or to output the audio signal by an audio output unit in the transmitter, as a selection, depending on a distance between the transmitter and the communication terminal, since the transceiver 25 and the outside speaker 14 are used to communicate with different people (e.g., the transceiver 25 is used to communicate with the police station 10 and the speaker 14 is used to communicate with people on the street) and not as alternatives depending a distance.

Further, it is submitted that it would not have been obvious to combine of the speaker 14 of Raskin with the network communication system of Monroe and that the combination would not render the present invention recited in claim 1 obvious.

As discussed above with regard to Raskin, it would not have been obvious to utilize the speaker 240, which is most likely included in the cockpit of the commercial airplane 10, to communicate with the ground control tower 216 because of many factors. It also would not be obvious to mount the outside speaker 14 of Monroe to the outside of the commercial airplane 10 to

communicate with the groung control tower 216. If the speaker 14 of Monroe were mounted to the outside of the commercial airplane 10, the outside speaker 14 would have to be able to transmit sound so that the sound could be heard above the commercial airplane's engine noise and well as all other noise associated with a busy airport. In addition, the outside speaker 14 would have to be able to transmit sound to the ground control tower 216 which is usually located 100 or more feet off of the ground. Further, the outside speaker 14 would have to be able to reliably communicate with the ground control tower 216 due to the inherent dangers associated with air travel. As a result, it would not be obvious to one of ordinary skill in the art to combine the speaker 14 of Raskin with the network communication system of Monroe.

In addition, even if the speaker 14 of Raskin is combined with the network communication system of Monroe, the combination still fails to disclose or suggest determining whether to transmit the audio signal by a radio transmitting unit in the transmitter or to output the audio signal by an audio output unit in the transmitter, as a selection, depending on a distance between the transmitter and the communication terminal, wherein the distance is obtained based on a field strength of a radio wave transmitted from the communication terminal, as recited in claim 1.

In sections 6-11 of the Office Action, (1) Rostoker, (2) Ichino, and (3) Strandwitz are relied on as disclosing (1) a wireless system for communicating video, audio and data signals over a narrow bandwidth, (2) a field strength detector, and (3) audio decoders, respectively. However, even if these references do, in fact, disclose these features, none of the references discloses or suggests an audio output instructing unit for determining whether to transmit the audio signal by a radio transmitting unit in the transmitter or to output the audio signal by an audio output unit in the transmitter, as a selection, depending on a distance between the transmitter and the communication terminal, wherein the distance is obtained based on a field strength of a radio wave transmitted from the communication terminal, as recited in claim 1.

As for claims 9, 13, 21 and 25, these claims are patentable over the references relied upon in the rejections for similar reasons as set forth above with regard to claim 1. That is, claims 9, 13, 21 and 25, like above claim 1, recite, in part, determining whether or not to output an audio signal from an audio output unit, depending on a distance between either (1) a transmitter and a communication terminal, (2) a communication terminal and a portable display terminal, or (3) a transmitter and a

portable display terminal, wherein the distance is obtained based on a field strength of a radio wave, which features are not disclosed or suggested in the references.

In addition, claims 7, 12, 17 and 27 are also patentable over any combination of the references relied upon in the rejections, since these claims each recite, in part, a field strength detector for measuring a field strength of a transmitted radio wave, wherein a selection is determined according to the measured field strength of the field strength detector. None of the references discloses or suggests this feature recited in claims 7, 12, 17 and 27.

As discussed above, Ichino is relied on as disclosing a field strength detector. However, Ichino discloses that a field strength detector is used to compare the strength of an FM simulcast signal against the strength of a television audio signal and automatically select the stronger of the two signals. (See column 2, lines 31-37). However, claims 7, 12, 17, 27 recite that the field strength detector for measuring a field strength of a transmitted radio wave, and that the measure field strength is used to determine a selection. As a result, it is apparent that Ichino fails to disclose or suggest this feature of claims 7, 12, 17 and 27.

Because of the above mentioned distinctions, it is believed clear that claims 1-4, 7-15, 17 and 21-29 are allowable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-4, 7-15, 17 and 21-29. Therefore, it is submitted that claims 1-4, 7-15, 17 and 21-29 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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Wireless moving image and audio transmitting system

FIELD OF THE INVENTION

[0001] The present invention relates to a wireless moving image and audio transmitting system capable of transmitting audio by selecting an audio output appropriate for application.

BACKGROUND OF THE INVENTION

[0002] Recently, as the radio communication technology and compression coding technology have ~~are~~ advanced, ~~the~~ information processing ~~apparatus~~ apparatus and ~~system~~ system are widely spreading for allowing making radio ~~communications~~ communication between personal computers, between a personal computer and peripheral device, or between other information terminals and controlling information transmission and devices. Therein, the apparatuses are becoming smaller and lighter, and more portable. Accordingly, of the two radio communication apparatuses, one is often portable and the other is stationary. In this trend, the system for wireless transmission of moving image data and audio data and reception in the portable display terminal has been put in practical use.

[0003] A conventional example is explained ~~convention~~.

[0004] A wireless moving image and audio transmitting system contains a moving image and an audio transmitter (hereinafter transmitter) 1 and a portable display terminal (portable terminal) 2. The transmitter 1 and the portable terminal 2 may communicate with each other through, for example, a mobile communication network.

[0005] Fig. 7 is a configuration of the transmitter in the conventional wireless

moving image and audio transmitting system.

[0006] In Fig. 7, a moving image input unit 11 of the transmitter 1 feeds a moving image. A moving image compression coder 12 compression-codes the moving image data output from the moving image input unit 11 into data applicable to radio transmission. An audio input unit 13 feeds audio data. An audio compression coder 14 compression-codes the audio data output from the audio input unit 13 into data applicable to radio transmission. A radio transmitting unit 15 multiplexes the moving image data and audio data thus compression-coded, and transmits the data to the portable terminal 2 by radio communication.

[0007] The moving image input unit is a video camera or recording and reproducing apparatus, and produces moving image data or still image data. It can be installed either inside or outside of the casing of the transmitter 1.

[0008] The audio input unit is a microphone or audio reproducing apparatus, and produces audio data. It can be also installed either inside or outside of the casing of the transmitter 1.

[0009] Fig. 8 illustrates a configuration of the portable terminal in the wireless moving image and audio transmitting system.

[0010] In the portable terminal 2 in Fig. 8, a radio receiving unit 26 receives compression-coded moving image data and audio data from the transmitter 1, and demultiplexes them. A moving image decoder 27 decodes the demultiplexed compresssion-coded moving image data. A moving image display unit 28 displays the moving image data decoded by the moving image decoder 27. An audio decoder 29 decodes the compression-coded audio data demultiplexed in the radio receiving unit 26. An audio output unit 30 outputs the audio data decoded by the audio decoder 29 through the speaker.

[0011] In the conventional wireless moving image and audio transmitting

system, the transmitter 1 transmits moving image and audio. The portable terminal 2 receives the moving image and audio. At this time, the display unit 28 displays the moving image. The audio output unit 30 outputs the audio through the speaker.

[0012] In the conventional wireless moving image and audio transmitting system, a large speaker could not be used so as not to sacrifice the portability of the portable display terminal. As a result, the tone quality was poor.

[0013] ~~Besides~~ Further, the bandwidth of radio communication was limited, and the bandwidth could not be widened, and hence, it was difficult to transmit the moving image ~~of~~ with high picture quality and sound of high tone quality.

SUMMARY OF THE INVENTION

[0014] It is, hence, an object of the wireless moving image and audio transmitting system of the invention to enhance the picture quality and tone quality, depending on the distance between the display terminal and transmitter, by using the limited bandwidth of radio communication, without sacrificing the portability of portable display terminal.

[0015] More specifically, when the portable display terminal is installed near the moving image and audio transmitter, that is, when the transmitter and portable display terminal are installed, for example, in the same household, the portability of the portable display terminal is not spoiled, and the bandwidth of radio communication is not widened. At the same time, the picture quality of the moving image and tone quality of the sound seen and heard by the user are enhanced.

[0016] The wireless moving image and audio transmitting system of the invention contains a moving image and audio transmitter, and a portable display terminal for communicating with the moving image and audio

transmitter and receiving at least one of a moving image and an audio signal.

[0017] In the moving image and audio transmitter:

[0018] A moving image compression coder compression-codes a moving image output from the moving image input unit.

[0019] An audio compression coder compression-codes an audio signal.

[0020] A radio transmitting unit transmits the moving image compressed and coded in the moving image compression coder and audio compression-coded in the audio compressing coder. An audio output unit outputs an audio signal.

[0021] An audio output instructing unit determines whether to transmit the audio signal by the radio transmitting unit or audio output unit, depending on the distance between the moving image and audio transmitter and the portable display terminal.

[0022] In the portable display terminal:

[0023] A radio receiving unit receives the compression-coded moving image and compressed and coded audio signal.

[0024] A moving image decoder decodes the moving image received in the radio receiving unit.

[0025] A display unit displays the moving image decoded by the moving image decoder.

[0026] An audio decoder decodes the audio signal received in the radio receiving unit.

[0027] An audio output unit outputs the audio signal decoded by the audio decoder.

[0028] An audio output determining unit determines whether to output the audio through the audio output unit or not, depending on the distance between the moving image and audio transmitter and the portable display terminal.

[0029] In this system, when the portable display terminal is installed ~~closely~~

close to the moving image and audio transmitter, for example, on the same desk in the household, the sound is output from the audio output unit incorporated in the casing of the transmitter, or the audio output unit connected by wire outside the casing of the transmitter. It, hence, prevents a lowering of audio output or tone quality due to limit in the size of the speaker in relation to tone quality deterioration or portability by compression-coding of audio data.

[0030] Further, when the portable display terminal is installed ~~closely~~ close to the transmitter, the audio output destination is changed by the instruction from the audio output instructing unit, and at the same time, the compression rate of the moving image in the moving image compressing coder is controlled. Thus, without widening the bandwidth, the picture quality of moving image can be enhanced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031] Fig. 1 illustrates a configuration of a moving image and audio transmitter in embodiment 1 of the invention.

[0032] Fig. 2 illustrates a configuration of a moving image and audio transmitter in embodiment 2 of the invention.

[0033] Fig. 3 illustrates a configuration of a moving image and audio transmitter in embodiment 3 of the invention.

[0034] Fig. 4 illustrates a configuration of a portable display terminal in embodiment 4 of the invention.

[0035] Fig. 5 (a) is a perspective outline view of a moving image and audio transmitter.

[0036] Fig. 5 (b) is a perspective outline view showing the state of a portable display terminal installed on a casing of the moving image and audio transmitter.

[0037] Fig. 6 is a perspective outline view of a portable display terminal in embodiment 6 of the invention.

[0038] Fig. 7 is a configuration of a conventional moving image and audio transmitter.

[0039] Fig. 8 is a configuration of a conventional portable display terminal.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0040] Preferred embodiments of the invention are described below by referring to Fig. 1 to Fig. 6.

~~(~~Embodiment 1~~)~~

[0041] Embodiment 1 is explained by referring to Fig. 1.

[0042] Fig. 1 is a configuration of a moving image and audio transmitter 4 (hereinafter transmitter) in embodiment 1 of the invention.

[0043] The same parts as in Fig. 7 and Fig. 8 are identified with the same reference numerals and their explanation is omitted.

[0044] In Fig. 1, a moving image input unit 11, an audio input unit 13, and an audio compressing coder 14 are the same as those in the transmitter 1 in Fig. 7, and their explanation is omitted.

[0045] In the transmitter 4 of embodiment 1 of the invention in Fig. 1, a moving image is output ~~in~~ to the moving image input unit 11. A moving image compression coder 19 controls the compression rate of the moving image data input from the moving image input unit 11 by an external control signal. Audio data is input ~~in~~ to the audio input unit 13. A radio transmitting unit 15 multiplexes the moving image compression-coded in the moving image compression coder 19 and audio data compression-coded in the audio compressing coder 14 and transmits them by radio communication.

[0046] An audio output instructing unit 16 instructs the output destination of the audio data output from the audio input unit 13 and change of compression rate of the moving image compression coder 19. An audio output switching unit 17 selects the output destination of the audio data as instructed by the audio output instructing unit 16. An audio output unit 18 is connected to the audio output switching unit 17 by wiring, and the sound input to ~~by~~ the audio input unit 13 is output from a ~~the~~ speaker.

[0047] The operation of the wireless moving image and audio transmitting system in embodiment 1 is explained below.

[0048] When the user uses the portable display terminal (hereinafter portable terminal) 7 in a place remote from the transmitter 4, the audio output instructing unit 16 instructs the audio output switching unit 17 to output the audio data to the audio compression coder 14.

[0049] The audio data is compression-coded in the audio compression coder 14, and is transmitted to the portable terminal through the radio transmitting unit 15 and mobile communication network, and is reproduced as sound in the portable terminal 5.

[0050] On the other hand, when the user uses the portable terminal 7 in a place close to the transmitter 4, the audio output instructing unit 16 instructs the audio output switching unit 17 to output the audio data to the audio output unit 18. The audio output switching unit 17 outputs the audio data to the audio output unit 18.

[0051] That is, the sound is output from the speaker built in the casing of the transmitter 4 or a speaker connected and installed outside of the casing by wiring.

[0052] The audio output instructing unit 16 instructs to output the sound from the audio output unit 18, and at the same time instructs the moving image

compressing coder 19 to lower the compression rate of the moving image data.

[0053] The moving image compressing coder ~~12~~ 19 lowers the compression rate of the moving image data, and transmits only the moving image data in the same band as in the case of ~~output of~~ outputting audio data to the portable terminal 7. Accordingly, the bandwidth for transmitting the moving image is wider, and the picture quality of the moving image displayed in the portable terminal is enhanced.

[0054] In the wireless moving image and audio transmitting system of embodiment 1, when the transmitter 4 and portable terminal 7 are used in a close distance, the audio data input to ~~from~~ the input unit 13 is directly output as sound from the audio output unit 18 of the transmitter 4. Therefore, the audio data ~~it~~ is free from deterioration by compression coding ~~of the audio data~~ or ~~limitation~~ limitations of speaker size in the portable terminal 7, so that the output quality of audio data may be enhanced.

[0055] Further, since no sound is ~~doutput~~ output from the portable terminal 7, the compression rate of moving image data can be lowered, and therefore, the picture quality of the moving image displayed in the portable terminal 2 can ~~be~~ also be enhanced.

~~(~~Embodiment 2~~)~~

[0056] Embodiment 2 is explained by referring to Fig. 2.

[0057] Fig. 2 illustrates a configuration of a moving image and audio transmitter 5 in embodiment 2.

[0058] The same parts as in the prior art and embodiment 1 are identified with the same reference numerals, and ~~the~~ their explanation is omitted.

[0059] In the transmitter 5 of embodiment 2, in addition to the transmitter 4 of embodiment 1, an audio output instructing command receiver (hereinafter command receiver) 21 is provided for receiving an audio output instructing

command (hereinafter command) transmitted from the portable terminal 7.

[0060] An audio output instructing unit 20, receiving this command, notices the audio output destination to the audio output switching unit 17. In this embodiment, this function is added to the audio output instructing unit 16 of the transmitter 4 in embodiment 1.

[0061] The command receiver 21 receives the command from the portable terminal 7, and notices and sends this command to the audio output instructing unit 20.

[0062] Responsive to the noticed command, the audio output instructing unit 20 instructs ~~the audio output destination to~~ the audio output switching unit 17 of the audio output destination.

[0063] Also responsive to the command, the audio output instructing unit 20 instructs the moving image compressing coder 19 to lower the compression rate of the moving image.

[0064] According to the wireless moving image and audio transmitting system of embodiment 2, the user, when placing the portable terminal near the transmitter 5, changes over the audio output destination from the portable terminal 7. At this time, the user can hear ~~the~~ sound of high quality from the transmitter 5. The user also instructs the lowering of ~~to lower~~ the compression rate of the moving image from the portable terminal 7, so that the moving image of high picture quality can be seen in the portable terminal 7.

~~(~~Embodiment 3~~)~~

[0065] Embodiment 3 is explained by referring to Fig. 3.

[0066] Fig. 3 illustrates a configuration of moving image and audio transmitter 6 in embodiment 3.

[0067] The same parts as in the prior art and embodiments 1 and 2 are identified with same reference numerals, and their explanation is omitted.

[0068] In the transmitter 6 of embodiment 3, in addition to the transmitter 4 of embodiment 1, a field strength detector 22 is provided in order to measure the field strength of ~~the~~ a field strength measuring wave transmitted from the portable terminal 7. The audio output instructing unit 20 sends ~~notices~~ the audio output destination to the audio output switching unit 17 depending on the magnitude of the field strength. In this embodiment, this function is added to the audio output instructing unit 16 of the transmitter 4 of embodiment 1.

[0069] The field strength detector 22 measures the field strength of the radio wave transmitted from the portable terminal 7, and calculates the distance between the transmitter 6 and portable terminal 7. Depending on the result, the detector 22 notices whether the distance is shorter than a predetermined value~~,~~ and notifies ~~to~~ the audio output instructing unit 20.

[0070] When receiving the notice that the distance is shorter than the predetermined value, the audio output instructing unit 20 judges that the distance between the transmitter 6 and portable terminal 7 is short. At this time, the instructing unit 20 instructs the audio output switching unit 17 to output the sound from the audio output unit 18 of the transmitter 6.

[0071] If the distance is longer than predetermined value, the audio output instructing unit 20 judges that the distance is far, and instructs the audio output switching unit 17 to transmit the audio data to the portable terminal 7.

[0072] According to the wireless moving image and audio transmitting system of embodiment 3, the transmitter 6 calculates the distance to the portable terminal 7, and outputs the sound to the optimum output destination by automatically changing over.

~~(~~Embodiment 4~~)~~

[0073] Embodiment 4 is explained by referring to Fig. 4.

[0074] Fig. 4 illustrates a configuration of portable display terminal 7 in embodiment 4.

[0075] The same parts as in Fig. 8 are identified with the same reference numerals, and their explanation is omitted.

[0076] In Fig. 4, a radio receiving unit 26, a moving image decoder 27, a moving image display 28, an audio decoder 29, and an audio output unit 30 ~~works~~ work as the same way as those in the portable display terminal 2 in Fig. 8, and ~~the~~ their explanation is omitted.

[0077] In the following explanation, the transmitter 5 in embodiment 2 is used as the moving image and audio transmitter.

[0078] In embodiment 4 of the invention, the portable display terminal 7 (hereinafter portable terminal 7) comprises the radio receiving unit 26, moving image decoder 27, moving image display 28, audio decoder 29, and audio output unit 30.

[0079] Further, a field strength detector 31 measures the field strength of the radio wave transmitted from the transmitter 5 in embodiment 2. An audio output determining unit 32 determines the audio output destination depending on the output from the field strength detector 31. An audio output instructing command transmitter 33 transmits the audio output instructing command (hereinafter command) to the transmitter 5 according to the instruction from the audio output determining unit 32.

[0080] The field strength detector 31 measures the field strength of the radio wave transmitted from the transmitter 5, and calculates the distance between the portable terminal 7 and transmitter 5. The detector 31 sends ~~notices~~ the result to the audio output determining unit 32.

[0081] The audio output determining unit 32, when the distance between the portable terminal 7 and transmitter 5 is judged to be short, determines to

output the sound from the audio output unit 18 of the transmitter 5.

[0082] If the distance judged to be distant, it is determined to output the sound from the audio output unit 30 of the portable terminal 7.

[0083] The audio output instructing command transmitter 33 creates an audio output instructing command according to the determination in the audio output determining unit 32, and transmits it to the transmitter 5.

[0084] In the transmitter 5 of embodiment 2, the command receiver 21 receives the command from the portable terminal 7, and sends ~~notices~~ this command to the audio output instructing unit ~~16~~ 20.

[0085] The audio output instructing unit 20 instructs the audio output destination to the audio output switching unit 17 according to the noticed command.

[0086] Also responsive to the command, the audio output instructing unit 20 instructs the moving image compressing coder 19 to lower the compression rate of the moving image.

[0087] According to the wireless moving image and audio transmitting system of embodiment 4, when the user places the portable terminal 7 near the transmitter 5, the transmitter 5 automatically changes over the audio output destination by receiving the command sent from the portable terminal 7. At this time, the user can hear the sound of high tone quality from the transmitter 5. The transmitter 5 also instructs the lowering of ~~to lower~~ the compression rate of the moving image, so that the moving image of high picture quality can be seen in the portable terminal 7.

[0088] Moreover, the portable terminal 7 can calculate the distance to the transmitter, without separately transmitting a radio wave of large power consumption for the purpose of measuring the field strength, so that the sound can be output by automatically changing over to the optimum output

destination.

~~(~~Embodiment 5~~)~~

[0089] Embodiment 5 is explained by referring to ~~Fig~~ Figs. 5(a) and (b).

[0090] Fig. 5 (a) is a perspective outline view of a moving image and audio transmitter 100.

[0091] Fig. 5 (b) is a perspective outline view showing the state of a portable display terminal installed on a casing of the moving image and audio transmitter 100.

[0092] In ~~Fig~~ Figs. 5(a) and (b), a moving image and audio transmitter 100 includes two built-in speakers 101a, 101b, and a detection switch 102 for detecting when a portable display terminal 103 is in ~~placed~~ place. A portable display terminal 103 comprises two built-in speakers 104a, 104b, and a liquid crystal display panel 105.

[0093] The detection switch 102 of the moving image and audio transmitter 100 is connected to the audio output instructing unit 16 in Fig. 1.

[0094] When the portable display terminal 103 is put on the transmitter 100, the detection switch 102 is turned on, and the audio output instructing unit 16 instructs to output sound from the speakers of the transmitter 100.

[0095] When the portable display terminal 103 is not put on the transmitter 100, the detection switch 102 ~~it~~ is turned off, and the audio output instructing unit 16 instructs for the outputting of ~~to output~~ sound from the speakers 104a, 104b of the portable display terminal 103.

[0096] In the wireless moving image and audio transmitting system of embodiment 5, when the portable display terminal 103 is remote from the moving image and audio transmitter 100, the sound is output from the speakers 104a, 104b positioned in front of the user viewing a ~~the~~ liquid crystal display panel 105 of the portable display terminal 103. When the display

terminal 103 is put on the casing of the transmitter 100, the sound of high tone quality is output from the speakers 101a, 101b of the moving image and audio transmitter 100.

~~(~~Embodiment 6~~)~~

[0097] Embodiment 6 is explained by referring to Fig. 6.

[0098] Fig. 6 is a perspective outline view of a portable display terminal 103 in embodiment 6.

[0099] In the wireless moving image and audio transmitting system of this embodiment, the moving image and audio transmitter 100, and built-in speakers 104a, 104b and liquid crystal display panel 105 of the portable display terminal 103 are the same as in embodiment 5, and their explanation is omitted.

[0100] What differs from embodiment 5 is that a changeover switch 106 for selecting the audio output destination is provided ~~closely~~ close to the liquid crystal display panel 105 of the portable display terminal 103.

[0101] In Fig. 6, the user changes over the changeover switch 106 of the portable display terminal 103 regardless of the distance between the moving image and audio transmitter 100 and portable display terminal 103. At this time, the portable display terminal 103 transmits the audio output instructing command instructing the audio output destination to the moving image and audio transmitter 100 by radio communication.

[0102] In embodiment 6, the changeover switch 106 is shown as a physical switch, but the same effect is obtained by using a software switch to be changed by operation of an icon or the like.

[0103] As described herein, according to the moving image and audio transmitting system of the invention, when the portable display terminal 103 is placed near the moving image and audio transmitter 100, in the moving image

and audio transmitter 100, the sound input from the audio input unit 13 is output directly from the speaker of the audio output unit 18. At the same time, the moving image data input from the moving image input unit 13 is transmitted to the portable display terminal 103 at a low compression rate by radio communication. As a result, the display quality of the moving image and output quality of audio can be enhanced without expanding the bandwidth of radio communication.

[0104] As explained in the embodiments, meanwhile, when the portable 103 terminal is placed near the transmitter, short distance radio data communication may be employed as the radio transmitting means from the portable terminal, or radio transmitting means of image data or audio data from the transmitter. The short distance radio data communication is a kind of mutual wireless connection between the transmitter and the portable terminal 103 without a mobile communication network, including, for example, communication by using Bluetooth.

[0105] The moving image and audio transmitter can also transmit moving image data or audio data to the portable display terminal through mobile communication network.